

CLAIMS

1. A device for processing products (2) in a process vessel (1), especially for cutting/shearing product clusters and/or materials (3) into smaller particles and dispersing them in a more or less liquid product bulk (4) or for mixing therein more or less liquid products with each other which are difficult to mix, said device having a drive unit (11) positioned outside the process vessel (1) and a processing unit (12) driven by the drive unit and positioned inside the process vessel, characterised in that the drive unit (11) drives the processing unit (12) without a shaft, and that the processing unit (12) comprises a stationary inner part (14) and, rotatable about this, an outer part (15), the inner and outer parts having the shape of substantially concentric rings (16, 17) arranged with a close fit to each other and having a plurality of through shearing recesses (18) opposing each other, and the products (2, 3, 4) that are to be cut/ shorn and/or mixed being suppliable to the area of the common centre axis (20) of the rings (16, 17) and being induced to move out through the shearing recesses while being shorn into pieces and leave the processing unit (12) through the ring (17) of the outer part (15), said ring also contributing to rotating the products (2, 3, 4) in the process vessel (1) around the processing unit (12).

2. A device as claimed in claim 1, in which the shearing recesses (18) comprise circular, oval or otherwise shaped holes or elongate slots (19) through the associated ring (16, 17).

3. A device as claimed in claim 2, in which the slots (19) are substantially parallel to and/or inclined to the centre axis (20) of the associated ring (16, 17)

and extend along substantially the entire height of the associated ring.

4. A device as claimed in any one of the preceding
5 claims, in which the ring (17) of the outer part (15) has a free end with a collar (21) over the corresponding free end of the ring (16) of the inner part (14) and in which the shearing recesses (18) in the ring of the outer part extend through the collar.

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5. A device as claimed in any one of the preceding claims, in which the ring (16) of the inner part (14) constitutes a part of a stator (22) with a bearing (23) and in which the ring (17) of the outer part (15) constitutes a part of a rotor (24), which is rotatably mounted
15 on the bearing of the stator.

6. A device as claimed in claim 4, in which the rotor (24) is completely rotationally symmetrical and
20 lacks projecting components such as wings, drivers etc, whereby the rotor is rotatable at a high speed.

7. A device as claimed in any one of the preceding claims, in which the drive unit (11) drives the rotor
25 (24) of the processing unit (12) by magneto drive without a shaft.